

V. REMARKS

Claims 1 and 6 are rejected under 35 USC 103 (a) as being unpatentable over Arai et al. (U.S. Patent No. 5,800,147) in view of Shibuya (U.S. Patent No. 4,544,332). The rejection is respectfully traversed.

The Examiner insists that Arai et al'147 discloses all the limitations of claim 1 except the limitation that the dimensions of a constricted portion are set so as to achieve an area equal to or less than the area of a circular section with a diameter of 1.5mm.

However, the compressor that has the constricted portion (105b) disclosed in Fig. 3 of Arai et al is a prior art, and the compressor that has the guide passage (70) disclosed in Fig. 7 of Arai et al does not have a particular constricted portion. In other words, the compressor of Arai adopts the composition of Fig. 7 in place of the composition of Fig. 3.

According to Arai et al, since the cylinder block has the guide passage therein for communicating the intermediate portion of any of the at least two refrigerant outlet passages other than the one of the at least two refrigerant outlet passages being communicated with the discharge port, with the one of the at least two refrigerant outlet passages being communicated with the discharge port, refrigerant is permitted to flow from the former, which is not communicated with the discharge port, to the latter, which is communicated with the discharge port, whereby refrigerant is prevented from becoming standing within the any of the refrigerant outlet passages other than the refrigerant outlet passage communicated with the discharge port. As a result, the any of the passages other than the refrigerant outlet passage communicated with the discharge port can serve effectively as a muffler space.

As a result, it is not necessary to install the constricted portion as shown in Fig. 3 in the compressor of Fig. 7 of Arai et al. Therefore, Arai et al does not disclose that the compressor having both guide passage and the constricted portion.

Moreover, constricted portion (105b) of the compressor of Fig. 3 of Arai et al does not correspond to constricted portion (40) of this invention.

As previously stated, since the compressor of Fig. 3 of Arai et al does not have the guide passage, the compressed refrigerant gas flows out from discharge chamber 124a to outlet passage 132 through port 103b and flows out from discharge chamber 124b to outlet passage 132 through port 105b, then discharges from the exhalation passage 132 to the outside by discharge port 140.

Therefore, constricted portion (105b) is a part of the main outflow route to lead the compressed refrigerant to the discharge port.

On the other hand, the compressor of this invention has guide passage (17), and the main outflow route is composed by communicating ports 19, 21→delivery passage 12b→guide passage 17→outlet side of delivery passage 12a (the right side from guide passage 17 of delivery passage 12a) →communicating port (15) →outlet (16).

Though there is somewhat flow of the refrigerant in constricted portion 40, the constricted portion cannot be assumed to be a part of the main outflow route because the dimensions of said constricted portion are set so as to achieve an area equal to or less than the area of a circular section with a diameter of 1.5mm and passage resistance (loss) is large.

That is, the diameter of constricted portion (40) of this invention is set only from the viewpoint that attempts the pulse decrease while constricted portion (105b) shown in Fig. 3 is constricted to secure enough the flow of the refrigerant from discharge chamber 124b to outlet passage 132 and to decrease the exhalation pulse. Therefore, constricted portion (40) of this invention is not intended to

secure the flow of the refrigerant, and the main outflow route of the present invention is the same as the compressor of Fig. 7 of Arai et al.

By the way, the composition of Fig. 7 of Arai et al has aimed to attempt the pulse decrease by installing the guide passage in place of the composition of Fig. 3 of Arai et al as mentioned above. Therefore, it can be said that there is basically some effect of the pulse decrease even if constricted portion (40) is not installed like the present invention.

However, it has been found to manifest a drastic increase in the level of discharge pulsation over a specific rotational rate range (1200 to 1600 rpm). For this reason, there are limits to the extent to which vibration and noise at the compressor can be reduced. The present invention pays attention about the discharge pulsation level in this specific rotational rate range and achieves the effect of decreasing the pulse in this specific rotational rate range by communicating the main outflow route and the discharge chamber through constricted portion 40 of a small diameter. Setting the dimensions of constricted portion so as to achieve an area equal to or less than the area of a circular section with a diameter of 1.5mm has a very important meaning to obtain such a prominent effect.

About the composition of Shibuya

In the compressor disclosed in Shibuya, front discharge chamber 29 and rear discharge chamber 29' are communicated by discharge passageway (17), and the guide passage has not been installed. Therefore, constricted portion 53a installed for the pulse decrease becomes a part of main outflow route.

For this reason, if the diameter of the constricted portion is set so as to achieve an area equal to or less than the area of a circular section with a diameter of 1.5mm as well as the composition of Fig. 3 of Arai et al, constricted portion 53a grows the passage resistance, and cannot compose the main outflow route.

For the Examiner's information, the Gazette discloses that the diameter of the constricted portion 53a is set as the hole of 6-8 mm. This means that constricted portion 53a is much bigger than constricted portion of the present invention to function as the main outflow route.

Therefore, though Shibuya discloses "the diameter of the constriction is set such that the required degree of pulsation attenuation is achieved" as the Examiner specified, the basic configuration of the compressor (composition of the main outflow route) is different from the present invention, the diameter of constricted portion and the effect of constricting are also quite different. The composition that the dimensions of constricted portion are set so as to achieve an area equal to or less than the area of a circular section with a diameter of 1.5mm has an important meaning that does not exist in the cited document.

For at least the reasons set forth above, withdrawal of the rejection is respectfully requested.

It is respectfully submitted that the pending claims are believed to be in condition for allowance over the prior art of record. Therefore, this Amendment is believed to be a complete response to the outstanding Office Action. Further, Applicants assert that there are also reasons other than those set forth above why the pending claims are patentable. Applicants hereby reserve the right to set forth further arguments and remarks supporting the patentability of their claims, including the separate patentability of the dependent claims not explicitly addressed herein, in future papers.

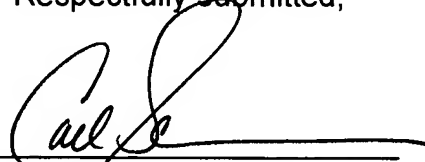
In view of the foregoing, reconsideration of the application and allowance of the pending claims are respectfully requested. Should the Examiner believe anything further is desirable in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' representative at the telephone number listed below.

Should additional fees be necessary in connection with the filing of this paper or if a Petition for Extension of Time is required for timely acceptance of the same, the Commissioner is hereby authorized to charge Deposit Account No. 18-0013 for any such fees and Applicant(s) hereby petition for such extension of time.

Respectfully submitted,

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